

The research program of the Center for Economic Studies (CES) produces a wide range of theoretical and empirical economic analyses that serve to improve the statistical programs of the U.S. Bureau of the Census. Many of these analyses take the form of CES research papers. The papers are intended to make the results of CES research available to economists and other interested parties in order to encourage discussion and obtain suggestions for revision before publication. The papers are unofficial and have not undergone the review accorded official Census Bureau publications. The opinions and conclusions expressed in the papers are those of the authors and do not necessarily represent those of the U.S. Bureau of the Census. Republication in whole or part must be cleared with the authors.

**MANUFACTURING FIRMS' DECISIONS REGARDING  
RETIREE HEALTH INSURANCE**

by

**Patricia H. Born\***  
**California State University**

and

**Alice M. Zawacki\***  
**U.S. Bureau of the Census**

**CES 03-14      June, 2003**

All papers are screened to ensure that they do not disclose confidential information. Persons who wish to obtain a copy of the paper, submit comments about the paper, or obtain general information about the series should contact Sang V. Nguyen, Editor, Discussion Papers, Center for Economic Studies, Washington Plaza II, Room 206, Bureau of the Census, Washington, D.C. 20233-6300, (301-457-1882) or INTERNET address [snguyen@ces.census.gov](mailto:snguyen@ces.census.gov).

## Abstract

This study analyzes the firm's decision to offer and contribute to retiree health insurance. We apply a binomial probit model and an interval regression model to analyze the likelihood of offering and the proportion of costs contributed by the firm. Our findings indicate that while firm characteristics affect the probability that a firm offers retiree health insurance, financial performance and alternative insurance options significantly affect the firm's generosity towards its cost. This study expands on previous research by including potentially important policy-related measures to the more limited set of firm and workforce characteristics that have been typically employed.

(JEL I10, D21, J33): Retirees; Insurance; Firm Behavior; Medicare

\* Any views, findings or opinions expressed in this paper are those of the authors and do not necessarily reflect those of the U.S. Bureau of the Census. The authors would like to thank Kristin McCue who provided crucial assistance and guidance on this project. We also wish to thank Jessica Vistnes, Carol Simon, Norman Thurston, Ron Jarmin, Randy Becker, Richard Langlois, Ken Couch, and Dennis Heffley for helpful comments.

## **1. Introduction**

In 1999, approximately 10 million people aged 55 and over relied on employer-sponsored health insurance as either their primary source of coverage or a supplement to their Medicare coverage (GAO 2001b). This study examines firms' decisions regarding retiree health insurance. More specifically, what are the factors influencing a firm's decision to provide health insurance to retirees and to contribute towards the cost of retiree health insurance premiums? The current study examines the firms' decisions regarding retiree health benefits while uniquely controlling for its financial performance and local Medigap and Medicare managed care options. The relationships between firm characteristics, financial performance, and market characteristics are interesting given a number of current social and economic trends.

Employers began offering retiree health insurance in the 1950s and 1960s as the result of collective bargaining with unions. The cost was low relative to total compensation, especially after Medicare was established in 1965 (Kelly 1985; Atkins 1993). The cost has been increasing, however, and in 1988, American corporations paid \$9 billion for company-sponsored group health plans for seven million retirees (GAO 1989). If companies continue to pay the same share of benefits then costs will increase to \$22 billion by 2008 (GAO 1989). These expenditures may help explain why 66% of large firms (200 or more employees) offered retiree health insurance in 1988, while only 34% did so in 2001 (Employer Health Benefits 2001 Annual Survey). Employers may continue to be less generous with respect to offering and paying for retiree health insurance in coming years.

One reason that fewer firms are offering health insurance to retirees is Financial Accounting Standard 106, which was adopted in 1993. The standard requires that firms now report the estimated value of the future liability of retiree health insurance, and many companies cite this as a reason for reducing retiree health benefits (GAO 2001b). Firm managers want to limit their expenses since this accounting standard affects the company's calculation of its profits and losses. The current study uniquely includes a measure of the firm's financial performance. If Financial Accounting Standard 106 does result in lower levels of reported financial performance for the firm, this can decrease the probability that the firm offers retiree health insurance. Financial performance is also an important factor to include in the analysis because this measure may reflect the firm's worker productivity and economic stability. To help ensure that productive workers do not leave, the firm may be motivated to provide health insurance to retirees.

A second reason for firms to reduce retiree health benefits is that if Medicare adds a prescription drug coverage benefit, employer-sponsored retiree health benefits with this benefit will be valued less by employees. Retirees currently value employer-sponsored benefits because they represent an important source for prescription drug coverage. If Medicare adds this benefit, employers may eliminate this expensive component of their retiree health insurance offerings.<sup>1</sup>

Third, firms have often encouraged employees to participate in employer-sponsored retiree health insurance plans through Medicare managed care offerings. Employers promoted these offerings because the premium cost was generally low (GAO 2000). In recent years, however, many Medicare managed care plan providers have

---

<sup>1</sup> On the other hand, since prescription costs can make up 40-60% of the employer's retiree health insurance cost, employers may continue providing retiree health insurance because it will cost them less (GAO 2001).

withdrawn from the market. The primary reason given for these withdrawals has been lower payment rates from Medicare to the managed care providers. Employers may be more reluctant to offer health insurance to their retirees if they are unable to offer benefits from Medicare managed care plans.

Fourth, firms' decisions about whether or not to offer retiree health insurance may also be affected by their analysis of retiree health insurance options outside the workplace. Medigap and Medicare managed care policies, like employer-sponsored retiree benefits, represent an important source of supplementary coverage for expenses that are uncovered under the Medicare program. Medigap represents coverage purchased in the individual insurance market that supplements Medicare. Depending upon which standardized plan the retiree chooses, uncovered Medicare expenses such as prescription medications, long term care, and copayments may be covered. Medicare managed care plans, which represent a lower cost option for employers providing retiree health insurance, can also be chosen by retirees themselves. Many individuals are attracted to these plans because the policies usually cover preventive services, prescription drugs, and some optical and dental services with no additional premium cost. If retirees can obtain insurance that supplements Medicare from a multitude of Medigap providers or Medicare managed care plans outside the workplace, firms may feel less compelled to provide retiree health insurance.

Finally, with employers' health insurance premiums based upon their pool of active and retired workers, and with the number of retirees relative to active workers increasing, employers face higher total insurance expenses. In addition, health insurance premiums are rising at a rate faster than general inflation (GAO 2001b).

Given the country's aging baby boom generation and economic changes, the trend for firms not to offer retiree health insurance (GAO 1998; McArdle et al. 1999) has profound implications for a large and growing share of the U.S. older population. Early retirees (55-64 years old) who are not yet eligible for Medicare may lack access to health insurance if employer-sponsored benefits are not offered. The insurance options they face in the individual market or through COBRA (Consolidated Omnibus Budget Reconciliation Act) could be prohibitively expensive.<sup>2</sup> With respect to Medicare-eligible retirees, employer-sponsored health insurance helps cover gaps in Medicare coverage such as deductibles, co-payments, and prescriptions drug benefits and in general is more comprehensive than Medigap plans (Jensen and Morrissey 1992). Without health insurance coverage for these expenses, more individuals may seek participation in Medicaid, the Federal program that represents the payer of last resort for the indigent. Without employer-sponsored retiree health insurance benefits, the increasing number of retirees and early retirees (GAO 1998; Department of Labor 1995) with greater health needs (GAO 2001b), health expenses (Chollet and Friedland 1987), and with a longer life expectancy (Warshawsky 1992) will mean greater financial challenges for retirees and pose a threat to the viability of the Medicaid program.

The current study addresses two questions about manufacturing firms' decisions on retiree health insurance benefits. First, what factors influence the probability that a firm will offer health insurance to retirees? Second, what factors influence the amount that the firm contributes to retiree health insurance premiums? This study begins with a

---

<sup>2</sup> This refers to the portion of COBRA that requires employers to offer the opportunity for terminated employees to purchase continuation of health care coverage under the group's medical plan (Kongstvedt 1996).

review of existing literature on firm's behavior with respect to retiree health insurance benefits. The following sections explain the data and methodology used in the current study. The results of the analyses and a discussion of the findings are then presented. After concluding remarks, the policy issues related to this analysis are reviewed.

## **2. Background**

A number of reasons have been offered for why a firm may offer health insurance to retirees – paternalistic employer philosophy (Salisbury and Fronstin 1996), tax benefits (Warshawsky 1992), lower wages paid (Warshawsky 1992; Finkel and Ruchlin 1991), and smoother relations with labor (Atkins 1993; Warshawsky 1992). Additional reasons are also closely related to firms strategizing to lower total labor costs and to achieve desired employee behavior. First, many have explained that employer-sponsored retiree health insurance can help a firm to attract and retain quality workers (Anderson et al. 2001; Abrahams 1993; Warshawsky 1992). This reason is particularly motivating for firms that do not have a ready supply of inexpensive and young workers, that have high training and turnover costs, and that require long-term workers for its production processes (Mitchell 1994).

Attracting and retaining workers in a competitive labor market relates to a second reason for firms offering health insurance to retirees. Researchers have pointed out that firms are able to potentially reduce employee turnover by offering this benefit (Clark et al. 1994; Warshawsky 1992; Clark and Kreps 1989). Findings from the 1988 and 1989 Employee Benefits Surveys suggest that employers may offer retiree benefits, including pensions and health insurance, to influence employee turnover and retirement patterns (Clark et al. 1994). No vesting in retiree health insurance occurs prior to retirement. An

employee quitting before retirement from a firm that offers this benefit, therefore, will not receive employer-sponsored health insurance during retirement. Retiree health insurance is one way that employers can reward long-term loyal service to the firm. Employers can also establish tenure requirements for retiree health insurance to help retain workers. To encourage worker loyalty, the 1992 Foster Higgins Survey and the 1992 Wyatt Survey of employers find that some firms have established length of service requirements for eligibility for retiree health insurance (Atkins 1993).

A third reason offered for why firms offer health insurance to retirees is to downsize rationally and encourage early retirement (Clark et al. 1994; Atkins 1993; Warshawsky 1992). Employees who wish to retire before age 65 are not yet eligible for Medicare benefits and may find health insurance premium costs in the individual market prohibitive. These individuals may continue working until age 65 only to continue employer-sponsored health insurance benefits. If the firm wishes to downsize in a humane manner, the firm can encourage early retirement by offering health insurance benefits to retirees. Retirees would pay less for employer-sponsored insurance than they would on the individual market. While some firms might offer this benefit to shrink the size of their workforce, other firms may be motivated by a desire to reduce labor costs (Clark et al. 1994). Wages paid to younger workers just hired are less than wages paid to older tenured employees. In addition to achieving lower labor costs with a younger workforce, firms may also be motivated to replace older workers with younger, more productive employees (Atkins 1993).

Retiree health insurance benefits will become increasingly important given the increasing number of retirees. From 1988 to 1994, the number of retirees increased from

18.5 million to 23.4 million (GAO 1998). In addition to their growing numbers, this segment of society is often in greater need of health care because of their poorer health status. In 1999, one-fifth of individuals 55 to 64 years of age and one-third of individuals 65 years of age and older reported fair or poor health compared to 14 percent of those between the ages of 45 and 54 (GAO 2001b).

Employer-sponsored health insurance for retirees is an important source of prescription coverage. In 1995, 28 percent of prescription drug coverage for Medicare beneficiaries was employer-sponsored (McArdle et al. 1999). Prescription costs, however, are generally the highest cost component for employers for Medicare-eligible retirees, representing 40 to 60 percent of the employer's retiree health insurance cost (GAO 2001b). The high cost of this important employer-sponsored benefit may result in firms no longer providing this coverage. Medigap policies do not appear to be an attractive alternative to current retirees for prescription coverage. In 1999, only 9 percent of those purchasing a Medigap policy bought one that covers prescription drugs (Chollet and Kirk 2001). One reason may be that in 1999 the average premium for a standardized Medigap plan with prescription coverage averaged more than \$1,600 compared to about \$1,150 for plans without prescription coverage (GAO 2001a). Other reasons may include less marketing of plans with prescription drug coverage and coverage limits. These limits can require that beneficiaries pay more than one half of their drug costs while catastrophic prescription drug expenses are not covered (GAO 2001a). In addition, as explained by Chollet and Kirk (2001), the largest percentage of current Medigap policyholders with prescription drug coverage will be declining in future years for two reasons. First, most of these individuals are over the age of 74 and will be dying.

Second, these retirees primarily hold policies from pre-standard Medigap policies, which are no longer available. With smaller numbers of Medigap policyholders with prescription drug coverage, therefore, the importance of this employer-sponsored benefit and the potential burdens placed on Medicare and Medicaid are magnified.

While some firms may continue to offer retiree health insurance, they are increasing the share of the insurance premiums paid by employees as a strategy for limiting their own liability (Department of Labor 1995; GAO 2001b; Darling 2002). Studies show that firms are increasingly requiring employees to pay one hundred percent of the premium (GAO 2001b). Increases in the employee's contribution towards the premium can lead to fewer retirees electing coverage when it is offered.

Many of the findings from past research and statistics on retiree health benefits are based on data obtained from retirees for firms from which the individual has retired. More specifically, individuals who are no longer in the labor force are asked questions about their previous employer, insurance coverage, and retiree health benefits. This information can be aggregated to the firm level to describe the characteristics of firms that offer retiree health insurance and those that do not. Sources for this type of retiree-based data include the Current Population Survey, the National Medical Expenditure Survey – Household Component, the Survey of Income and Program Participation, and the Medicare Current Beneficiary Survey. This approach fails to capture important factors, however, including cost considerations and other insurance options available in the market that can influence the firm's decisions with respect to offering retiree health insurance and contributing towards its cost.

Research shows that larger firms and those in manufacturing are more likely to offer retiree health insurance benefits (Leavitt 1985; U.S. Senate Special Committee on Aging 1986; Clark and Kreps 1989; GAO 1989; Morrissey et al. 1990; Warshawsky 1992; Clark et al. 1994; U.S. Department of Labor 1995; Loprest 1998). Mixed findings have resulted from studies looking at the location of the firm (Morrissey et al. 1990; Clark et al. 1994). With respect to employee characteristics, studies show that males, unionized employees, and those with higher pre-retirement earnings are more likely to be offered retiree health insurance by employers (Monheit and Schur 1989; U.S. Department of Labor 1995; Loprest 1998).

The cost to retirees for employer-sponsored health insurance benefits has also been analyzed. Most retirees are required to pay some portion of the health insurance premium (Department of Labor 1995; Morrissey et al. 1990). In 1994, the annual premium cost for family coverage was \$1200 and \$684 for single coverage (Department of Labor 1995). In 1988, approximately 46 percent of retirees with employer-sponsored health insurance had employers who paid the premium in full while 38 percent of the retirees paid nothing (Morrissey et al. 1990).

Our study looks at retiree health insurance benefit offerings at the firm level. Since existing findings are based almost exclusively on firm and workforce characteristics, potentially important policy-related issues regarding changes in accounting standards, firms' financial performance, and market characteristics are thereby omitted. We expand on previous work by using firm data and by including variables that measure financial performance and alternative insurance options. Our research also uses more recent data from 1999.

### 3. Data

This study merges data from four sources. These primary sources of data are the 1999 Medical Expenditure Panel Survey – Insurance Component (MEPS – IC) List Sample and the 1997 Census of Manufactures (CMF). The MEPS – IC list sample, which is sponsored by the Agency for Health Care Research and Quality, collects data on health insurance plans from establishments selected from a Bureau of the Census list frame of private-sector business establishments. Data includes information on health insurance premiums, contributions by employers and employees, and firm and workforce characteristics. The CMF collects establishment-level statistics for manufacturing establishments with one or more paid employees including the number of employees, payroll, and a measure of output. The CMF is collected every five years or years ending in the digit “2” or “7.” Because of this data collection schedule, we selected 1997 data for matching with the 1999 MEPS – IC.

The third matched data set is the data on Medicare Managed Care Market Penetration by state for all Medicare Plan Contractors from December 1999, which is from the Centers for Medicare and Medicaid Services. This data on Medicare managed care plans provides information on their Medicare payment rates and the number of plans by state. Finally, the study uses 1999 data on Medigap group and individual insurers and premiums by state from Chollet and Kirk’s (2001) tabulation of National Association of Insurance Commissioners statistics.<sup>3</sup> Data from the MEPS – IC and the CMF is linked using firm identifiers, while Medicare and Medigap data is matched by state.

---

<sup>3</sup> This tabulation did not include premium data for Massachusetts, Minnesota, and Wisconsin. These three states each had their own system of standardizing Medigap policies prior to the Federally-mandated standardization program. We contacted these states to obtain Medigap premium data.

We aggregate the establishment-level data from these sources to the firm level for analysis, because the MEPS establishment questionnaire asking about health insurance offerings to retirees refers to the firm and not the establishment.<sup>4</sup> This is also done because the decision to offer health insurance to employees is presumably made at the firm level. In addition, once retired, former employees essentially have a relationship with the firm and not a particular establishment.

We restrict the MEPS – IC sample in this study to those offering health insurance to their employees. We further restrict the sample to manufacturing firms based upon their reported standard industrial classification (SIC) code. Establishment-level data from the CMF is included if a firm has at least 50 percent of their establishment’s payroll in manufacturing. We determine that a firm is primarily in manufacturing by comparing total payroll for the firm’s establishments found in the CMF to the firm’s total payroll for the firm’s establishments on the Census Bureau’s list of businesses (the Standard Statistical Establishment List or SSEL).

This study uses only firms found in the MEPS – IC. Figure 1 provides an illustration of how we derive the firm-level variables for the current study, which are derived from the MEPS – IC and CMF samples of establishments. As Figure 1 shows, firm averages measuring firm and workforce characteristics are generalized based on establishments C and D that are sampled in the MEPS – IC. Firm averages for the financial performance measures are based on CMF data for establishments B and C and

---

<sup>4</sup> Some establishments in the same firm may answer this question differently because they do not have full familiarity with their firm’s offering of this benefit. Only firms with all of their establishments answering yes or no to the question of whether or not the firm offers health insurance to retirees are used in the current analysis.

use all manufacturing data. Information from establishment A, which is not sampled in the MEPS – IC and is outside manufacturing, does not enter into the analysis.

Table 1 provides information on unweighted sample sizes. The number of all firms and the number of firms that offer health insurance to employees and to retirees found in the MEPS – IC sample are presented along with their associated number of establishments and employees. Comparable sample sizes are shown for the manufacturing firms used in the current study.

#### **4. Methodology**

The first stage of our analysis studies the probability of whether or not a firm offers health insurance benefits to retirees using a weighted probit model that corrects for the MEPS – IC complex survey design. The binary dependent variable is modeled as a function of the firm's financial performance, insurance options for retirees, firm and workforce characteristics.

The second research question that we address is what factors explain the percent of the premium cost for retiree health insurance that is contributed by the firm? Ordinary regression to explain the firm's decision regarding cost sharing for retiree health insurance premiums is not appropriate because this decision is not made randomly but is contingent upon the firm deciding to offer retiree health insurance. The second stage of the analysis, therefore, uses a weighted tobit model that contains a selection bias factor on the right hand side and that also corrects for the MEPS – IC complex survey design. The selection bias factor is an Inverse Mill's Ratio that is calculated using the coefficients from the probit model in the first stage of analysis. Given that the firm offers health

insurance to retirees, the tobit model explains the percentage of the retiree health insurance premium for single (family) coverage that is contributed by the firm. Because this percent is censored at zero and at one hundred percent, a two-tailed censored or interval regression variation of the tobit model is used. The percent of the retiree health insurance premium that is contributed by the firm is analyzed using the firm's financial performance, the availability of Medicare managed care and Medigap options, Medicare and Medigap premiums, firm and workforce characteristics.

As explained earlier, a firm may be motivated to offer health insurance to retirees for a number of reasons that are related to lowering labor costs. A measure of financial performance helps provide evidence that the firm is keeping labor costs down, and allows for an examination of the impact of Financial Accounting Standard 106. We use a measure of financial performance to help explain the probability that the firm offers health insurance to retirees and to explain the firm's cost sharing for retiree health insurance premiums.<sup>5</sup>

While financial performance may positively influence the firm's generosity with respect to retiree health insurance benefits, an attractive retiree health insurance benefit package may improve the firm's financial performance. A firm may be more profitable if retiree health insurance benefits help to attract and retain a quality and productive workforce. Despite our acknowledgement that the financial performance measure may be endogenous in the models explaining the firm's decisions regarding retiree health

---

<sup>5</sup> Another measure of financial performance, market competition, was also included in earlier models. This construct accounted for firms who have establishments operating in multiple states and in multiple areas of manufacturing (Born 2001). The market competition measure was the effective number of "equally-sized competitors in the firm's market and could conceivably control for competition in the firm's product market and/or labor market. We did not find that this variable mattered and we decided to subsequently omit this measure.

insurance, we do not have the measures necessary to model financial performance adequately.

We measure the firm's financial performance by gross profit per employee. This is an average of its establishments' value added minus payroll costs and then calculated per employee. Value added is a construct found in the CMF. It is calculated by subtracting the total cost of materials from the value of shipments and other receipts and adjusting the resulting amount by the net change in finished products and work-in-process inventories between the beginning and end of the year. While value added accounts for material costs, it does not account for payroll costs, which represent the second major operating cost to a manufacturing firm.<sup>6</sup> By calculating value added minus payroll costs, a gross profit measure is derived. We further refine this variable by calculating it per employee in order to control for firm size.<sup>7</sup> We expect this variable to have a positive relationship with the probability that the firm offers retiree health insurance and the percentage of the retiree health insurance premium that is contributed by the firm. Producers with a greater level of gross profit per employee are in a stronger financial position and more likely to be generous with respect to retiree benefits.

Market alternatives may be important because if retirees have more insurance options outside the workplace, they will value employer-sponsored health benefits less. Consequently the employer would be less likely to offer health insurance to retirees and

---

<sup>6</sup> An alternative financial performance measure was based solely on value added per employee and found to be insignificant. Again, because this variable only accounted for the firm's material costs, it was considered an inferior measure of profit. Earlier models also included an alternative financial performance measure based on the firm's output. Because the output-based measure did not account for material or payroll costs, it too was abandoned as an appropriate measure of financial performance.

<sup>7</sup> When financial performance was not measured per employee, it was also significant.

would contribute less towards the cost of retiree health insurance because retirees place a low value on the benefit.

We include in the model, therefore, independent variables that measure the number of Medicare managed care plans, and Medigap individual and group insurers to proxy the extent of market alternatives to employer-sponsored health benefits. These measures are weighted averages based on the establishment's total value of shipments and state. Medigap insurance can be purchased by individuals on their own or through a purchasing group association such as AARP (American Association of Retired Persons). Like employer-sponsored retiree health insurance plans, Medigap plans help cover expenses such as prescriptions and deductibles not paid by Medicare. If retirees have more alternatives to help pay for these uncovered Medicare expenses, measured by more Medigap group and individual insurers, the probability that the firm offers health insurance to retirees is expected to decrease. We also expect that the variables measuring the number of Medigap group and individual insurers to have a negative relationship with the percentage of the monthly retiree health insurance premium that is contributed by the employer. The availability of individual Medigap insurers is expected to have a stronger influence than the number of group insurers since individual policyholders represented 75 percent of all Medigap policyholders in 1999 (Chollet and Kirk 2001).

Employer-sponsored retiree health insurance that is provided through Medicare managed care plans is associated with very low premiums. The cost to the employer for these managed care plans, therefore, is generally lower relative to fee-for-service plans. Consequently, we predict that the number of Medicare managed care to have a positive impact on the probability that the firm offers health insurance to retirees. In addition, we

expect the number of Medicare managed care plans to have a positive relationship with the firm's contribution towards the premium cost of retiree health insurance. The employer faced with more Medicare managed care plan options in their area and a lower cost for retiree health insurance benefits are expected to contribute a greater percentage of this lower premium cost.

We include additional independent variables for the average annual Medigap and Medicare managed care premiums<sup>8</sup> that are also weighted averages across states based on the firm's share of total value of shipments in each state. The Medicare managed care premium is based on the amounts that Medicare Parts A and B pay to the managed care insurance provider, higher values for this measure reflect lower premium and liability costs to the employer. We expect the firm, therefore, to be willing to pay a higher percentage of this low cost. We also predict that Medigap premiums to have a positive relationship with the firm's contribution towards retiree health insurance premium costs. If employees face higher Medigap premiums, they will place a greater value on employer-sponsored benefits. Employers, therefore, are expected to be more generous.

Our model also controls for firm characteristics including size, age,<sup>9</sup> multi-unit status, and location. Multi-unit status refers to a firm that has more than one establishment. Firm size is measured using dummy variables indicating a small firm (fewer than 50 employees), a medium-sized firm (50 to 999 employees), or a large firm

---

<sup>8</sup> While an imperfect measure of the actual premiums charged, the measure included in the current analysis will provide information on the impact of Medicare managed care premium costs on the employer and their cost sharing decision.

<sup>9</sup> Each establishment reports the age of their firm. The number of years reported might vary, perhaps in relation to how long an establishment has been with the firm. Earlier analyses were performed using a measure of age that was based on a firm average of its establishments' reported number of years. The current analyses are based on the maximum age reported by any of the firm's establishments. The results are the same with either measure.

(1000 or more employees).<sup>10</sup> We omit the size category for large firms since these firms are more likely to offer retiree health insurance and to contribute more towards its cost. We expect an older, larger, multi-unit firm to be more likely to offer retiree health insurance and an older, larger firm to contribute more towards the premium cost of retiree health insurance. These established firms are often unionized, have greater financial stability, and public prominence. These characteristics suggest that the firm will remain solvent and able to pay for retiree health insurance benefits in future years (Warshawsky 1992). In addition, an older firm may have begun this employee benefit decades earlier when it was less costly. We measure location by separate variables indicating the percentage of the firm's operations that are located in the northeast, west, and Midwest relative to the south. We omit the south category because this region of the country offers the most Medicare managed care plans and Medigap insurers.

Our model includes additional independent variables that measure workforce characteristics. These include the percent of the employees that are female and the percent that are 50 years of age or older. The relationship between an older workforce and the probability that the firm offers health insurance to retirees is difficult for us to predict.<sup>11</sup> The relationship could be negative if the firm offers this benefit because it wants employees to retire early. The firm's older employees would then retire and the

---

<sup>10</sup> Earlier analyses used a linear measure for firm size. Because firm size enters the model in the denominator of the financial performance measure, additionally entering firm size as a linear measure may distort the findings. Based upon this point and following an examination of the coefficients for the different size categories, we decided that dummy variables for firm size are more appropriate.

<sup>11</sup> While research has shown a relationship between the availability of retiree health insurance and early retirement behavior (Rogowski and Karoly 2000; Fronstin 1999; Gruber and Madrian 1995; Karoly and Rogowski 1994; Gustman and Steinmeier 1993), selection bias by employees 50 years of age and older at firms with retiree health insurance offerings is uncertain. Firms generally have tenure requirements for retiree health insurance benefits; therefore, the likelihood of older workers moving to work at a firm with this benefit would be reduced.

firm would be left with fewer employees 50 years of age or older. On the other hand, the relationship could be positive because as a form of deferred compensation, retiree health insurance offerings could reduce turnover leaving the firm with an older workforce. Our model also includes both linear and quadratic terms that control for the percentage of the workforce that is unionized since the effects of each are expected to be different. We expect the relationship between both the probability that the firm offers retiree health insurance and the percent contributed towards retiree health insurance premiums and the percentage of the firm's employees that are unionized to be positive. If more employees are unionized, the bargaining power of the union at the firm is expected to be stronger and negotiate for more benefits, including retiree health insurance. Also, unionization may enhance health insurance benefits for retirees because unions emphasize the preferences of the older workers since they are less mobile and important in the formation of union bargaining goals (Buchmueller et al. 2001). In contrast, we expect the relationship between the probability that the firm offers retiree health insurance and the quadratic term for unionization to be negative. Measures indicating the percent of the workforce that earns between \$6.50 and \$15 per hour and more than \$15 per hour are analyzed relative to the percent that earns less than \$6.50 per hour.

## **5. Results**

Table 2 provides information on the sample of manufacturing firms used in the current study and also the MEPS – IC sample of firms that offer health insurance to employees and retirees. While less than 14 percent of the firms in all industries in the MEPS – IC sample that offer health insurance in the MEPS – IC offer it to retirees, almost 23 percent of the manufacturing firms that offer health insurance to employees

offer this benefit to retirees. This is consistent with other evidence showing that firms in the manufacturing industry are more likely than other types of firms to offer health insurance to retirees (GAO 1989; Warshawsky 1992; U.S. Department of Labor 1995; Loprest 1998). In general, however, the descriptive statistics for the two weighted samples are quite similar with respect to most of the measures. Although not surprising, the most striking differences are that the manufacturing firms tend to be larger, older, more likely to be located in the Midwest and south, have fewer female employees, have more middle wage earners, and to have more unionized employees.

Table 3 provides a comparison across the firms that offer health insurance to their retirees. The two samples are quite comparable in terms of the firm's cost sharing for the retiree health insurance premium. The only notable differences being that more of the manufacturing firms are larger, located in the Midwest and south and the manufacturing firms have fewer female employees and more unionized employees.

The descriptive statistics for the weighted sample used in the current study allow a comparison of manufacturing firms that offer health insurance to retirees and make different levels of contributions to premiums for single coverage (see Table 4). As expected, if a firm makes no contribution to the cost of the premium for single coverage, the firm contributes little to the retiree health insurance premium for family coverage. When a firm pays less than the full amount of the premium, the firm contributes approximately to half of the cost for both single and family coverage.

Table 4 shows a few striking differences between these three samples of manufacturing firms that offer health insurance to retirees. First, the most interesting is that the samples differ with respect to financial performance. Firms that contribute

between zero and one hundred percent of the retiree health insurance premium have the highest average level of financial performance.

Table 4 also shows differences between the three samples with respect to other insurance options. Firms in areas with the highest average premiums for Medigap and Medicare managed care plans pay the full cost of retiree health insurance premiums. On the other end of the cost sharing spectrum, the sample of firms that contribute nothing towards the cost of retiree health insurance premiums have the highest number of Medigap insurers and Medicare managed care plans in their area.

With respect to firm and workforce characteristics, Table 4 reveals that firms that make some but less than the full contribution to retiree health insurance premiums are much larger and tend to be older. Although the average difference in workforce characteristics are not very large, this same sample of firms have more unionized and high wage employees.

The results of the binary probit model are presented in Table 5. The results of the probit model indicate that firm characteristics are the significant factors affecting the probability that the firm offer health insurance to retirees. As expected, relative to large firms, small and medium-sized firms are less likely to offer health insurance to retirees. More specifically, the marginal effects show that being a small firm relative to a large firm reduces the probability that the firm offers this benefit by almost 20 percent. Being a medium-sized firm reduces the probability by approximately 13 percent. Older firms are also more likely to offer health insurance to retirees. The coefficient for age is 0.01 and indicates that a one-year increase in age results in a 0.008 standard deviation increase in the predicted probit index.

The results from the second stage of the analysis, which explains the firm's contribution towards the retiree health insurance premium for both single and family coverage, are shown in Table 6.<sup>12</sup> While financial performance and the number of Medicare managed care plans are significant in the single coverage model, the measures for Medigap premiums and high wage earners are significant in the family coverage model. A firm contributes more to the cost of single coverage if it performs better financially. One additional dollar of profit per employee results in an expected 0.1 percent increase in the percent of the retiree health insurance premium cost contributed by the firm for single coverage. The manufacturing firm's contribution for single coverage also increases with the number of Medicare managed care plans. The marginal effect, however, is quite small. One additional plan results in only a 0.02 percent increase in the percentage contributed by the firm towards the cost of single coverage. With respect to the firm's contribution towards the cost of family coverage, the firm is more generous if Medigap premiums are higher and a higher percentage of their workforce is high wage earners. While the marginal effect for Medigap premiums is quite small, the marginal effect for the percent of the workforce earning more than fifteen dollars per hour is worth mentioning. If the percent of high wage earners increases by one, the percent of the cost for family coverage contributed by the firm increases by one percent.

## **6. Discussion**

---

<sup>12</sup> The sample used in the model explaining the firm's contribution towards the retiree health insurance premium for single coverage has 182 observations while the sample for family coverage has 169 observations. With a difference of just thirteen observations, the results in these two models from both stages of the analysis differ and suggest that the findings may not be stable.

We find that while firm characteristics affect whether or not a firm offers health insurance to retirees, the firm's financial performance and other insurance options significantly affect the firm's generosity towards the cost of retiree health insurance premiums. Similar to past research, the first stage of the analysis shows that larger and older firms are more likely to offer health insurance to retirees. The size and age of a firm provide indication of the firm's stability. That is, these characteristics suggest that the manufacturing firm is stable and will be able to sponsor health insurance for its retirees when they are ready to take advantage of this benefit in the future.

The findings from our study indicate the importance of including measures of financial performance and alternative insurance options in analyses on the firm's decision regarding retiree health insurance. The relationship between the firm's financial performance and its contribution towards the premium for single retiree coverage is positive. We find this interesting given the passage of Financial Accounting Standard 106. If the accounting of the future liability of retiree health insurance on earnings' statements reduces the financial performance of the firm, retirees who are offered this benefit will be required to pay a larger percentage of the premium. In addition, this positive relationship between financial performance and retiree health benefits suggests that firms' generosity towards the cost of retiree health insurance will also be reduced by other factors that would potentially hurt the financial performance of the firm. These include a slowdown in economic growth (GAO 2001b) and increased foreign competition.

Our results also show that the number of Medicare managed care plans significantly increases the percent the firm contributes towards the premium cost of

retiree health insurance for single coverage. The employer's contribution, in turn, impacts the affordability of employer-sponsored health insurance for the retiree. In other words, the availability of Medicare managed care plans, which have lower premiums and allow firms to offer retiree health insurance benefits at a lower cost, can be important with respect to retiree take up rates.

Our results from the analysis of family coverage show that two different factors are important. Higher Medigap premiums and a higher percentage of high wage earners are both associated with the firm contributing more towards the cost of retiree health insurance for family coverage. First, if the cost of alternative insurance options such as Medigap insurance premiums is higher, employees will value employer-sponsored retiree health insurance more. Because employees would place a higher value on this benefit under these circumstances, the firm may be inclined to contribute more towards the cost of retiree health insurance.

Second, we find that firms are more generous in their contributions towards the cost of family coverage if a higher percentage of their workforce earns more than fifteen dollars per hour. Part of the explanation for this finding may be that high wage earners are more willing to give up part of their wages for the benefit of retiree health insurance. These individuals will experience a larger pre-tax advantage from this employer-sponsored benefit than low wage earners in a lower tax bracket. To the extent that wages are indicative of a productive and quality workforce, our finding may provide additional support for the theory that employers offer more affordable retiree health insurance in order to retain quality employees.

## **7. Policy Issues**

Our study identifies economic factors impacting manufacturing firms' decisions about retiree's health insurance options. If firms stop providing health insurance to retirees or retirees refuse employer-sponsored health insurance options because they cannot afford their share of the premium cost, a greater financial burden may be potentially placed on both Medicare and Medicaid.

Employer-sponsored health insurance for retirees represents a source of supplementary coverage for Medicare participants. This benefit from firms often provides coverage for prescription medications, which is not provided by Medicare. Without employer-sponsored coverage, retirees face paying more out-of-pocket for prescriptions and other benefits not covered by Medicare.

It has been suggested that employers are counteracting potential changes in Medicare that will make Medicare secondary to all employer-sponsored insurance (Commentary by Timothy Ray in Warshawsky 1992). Because this would result in greater coverage liability for the employer-sponsored coverage, fewer firms may offer health insurance to retirees or make smaller contributions towards its cost. Also, to the extent that retirees coordinate employer-sponsored health insurance with Medicare benefits, the cost of employer-sponsored plans will increase as Medicare decreases its benefits (Warshawsky 1992). In addition, if Medicare raises the eligibility age to 67, even more retirees will face greater challenges in accessing affordable health insurance. These issues also relate to Medicaid. More retirees will seek participation in this Federal program if they are unable to afford employer-sponsored supplemental health insurance plans to Medicare or unable to access this insurance option.

## **8. Summary**

This study has examined manufacturing firms' decisions regarding retiree health insurance. First, we analyze the probability that the firm offers health insurance to retirees. Based upon the firm offering this benefit, we study the amount that the firm contributes towards the health insurance premium for both single and family coverage. Our inclusion of measures for the firm's financial performance and other insurance options uniquely adds policy-related information to the existing body of literature.

Our findings indicate that the firm's financial performance and alternative health insurance options are important to the analysis. Past studies that have failed to control for these factors are unlikely to capture policy issues related to this important benefit at a societal level. For example, the results from the current study suggest that to the extent that exogenous factors, such as changes in Financial Accounting Standard 106, negatively impacts a firm's financial performance, the consequence will be smaller employer cost sharing contributions. The resulting cost burden on employees can potentially make employer-sponsored retiree health insurance benefits prohibitively expensive.

This study also shows that retirees from firms in areas with more Medicare managed care plans would receive a larger contribution from the firm towards retiree health insurance premium costs for single coverage. Greater generosity from the firm increases the affordability of employer-sponsored health insurance for retirees. The current trend shows Medicare managed care plans withdrawing from the market. The results from our study suggest that this exodus may make employer-sponsored retiree health insurance plans less affordable for retirees.

As the economy moves from a concentration in manufacturing to services, lack of insurance coverage for early retirees and comprehensive medical benefits could become an even larger problem as the number of manufacturing firms dwindles. Our study has shown that firms contribute more towards the cost of family coverage if Medigap premiums are higher. This is important because employer-sponsored retiree health insurance is more comprehensive than Medigap. Retirees from firms with higher cost sharing levels may not opt for Medigap, which would have less comprehensive medical and no prescription coverage. Employer-sponsored retiree health insurance may provide retirees with a less costly insurance option to supplement Medicare.

Employers represent an important source of retiree health insurance coverage, which helps those who might otherwise be uninsured. The number of uninsured retirees will inevitably grow with the aging of the baby boom generation. This research helps us to understand the factors that might damage this important relationship between firms and retiree benefits.

## Cited References

Abrahams, T. 1993. Retiree from McDonnell Douglas. Testimony given before the Select Committee on Aging, U.S. House of Representatives. March 3, 1993.

Anderson, W., K. Hutchison, N. West, et al. 2001. *Summary of Findings from Key Informant Interviews from the Retiree Health Benefits Project*. Paper to Centers for Medicare and Medicaid Services under HCFA Contract No. 500-95-0061. 2001.

Atkins, G. Lawrence. 1993. "The Employer Role in Financing Health Care for Retirees." In Mazo, Judith F., Anna M. Rappaport, and Sylvester J. Schieber, eds., *Providing Health Care Benefits in Retirement*. Ralph H. Blanchard Memorial Endowment Series, vol. 5, Philadelphia: University of Pennsylvania, Wharton School, Pension Research Council; Philadelphia: University of Pennsylvania Press, 100-124.

Born, Patricia. 2001. "Insurer Profitability in Different Regulatory and Legal Environments." *Journal of Regulatory Economics* 19 (3): 211-237.

Buchmueller, Thomas C., John DiNardo, and Robert g. Valletta. 2001. "Union Effects on Health Insurance Provision and Coverage in the United States." NBER Working Paper Series, #8238. Cambridge, Mass: National Bureau of Economic Research. <http://www.nber.org/papers/w8238>.

Chollet, D. and R. Friedland. 1987. "Employer-Paid Retiree Health Insurance: History and Prospects for Growth." In *The Changing Health Care Market*, edited by Frank McArdle, pages 205-219. Washington, D.C.: Employee Benefits Research Institute.

Chollet, Deborah and Adele Kirk. 2001. *Medigap Insurance Markets: Structure, Change, and Implications for Medicare*. Mathematica Policy Research Inc. MPR Reference No.: 8733-310.

Clark, Robert L., Linda Shumaker Ghent, and Alvin E. Headen, Jr. 1994. "Retiree Health Insurance and Pension Coverage: Variations by Firm Characteristics." *Journals of Gerontology: Social Sciences* 49, no. 2: S53-S61.

Clark, Robert L., and Juanita M. Kreps. 1989. "Employer-Provided Health Care Plans for Retirees." *Research on Aging* vol. 11, no. 2: 206-224.

Darling, Helen. 2002. The 2002 National Health Policy Conference. Press Release. [http://www.healthaffairs.org/press/In\\_The\\_News\\_013002.htm](http://www.healthaffairs.org/press/In_The_News_013002.htm).

Department of Labor. 1995. *Retirement Benefits of American Workers: New Findings from the September 1994 Current Population Survey*. U.S. Department of Labor, Pension and Welfare Benefits Administration, Office of Research and Economic Analysis.

Fronstin, Paul. 2001. *Retiree Health Benefits: Trends and Outlook*. Employee Benefit Research Institute Issue Brief Number 236. Washington, DC: EBRI.

\_\_\_\_\_. 1999. "Retirement Patterns and Employee Benefits: Do Benefits Matter?" *The Gerontologist* 39 (1): 37-47.

General Accounting Office. 2001a. *Medigap Insurance: Plans Are Widely Available but Have Limited Benefits and May Have High Costs*. Report to Congressional Committees. Publication No. GAO-01-941. Washington, D.C.: General Accounting Office, July 2001.

\_\_\_\_\_. 2001b. *Retiree Health Benefits: Employer-Sponsored Benefits May Be Vulnerable to Further Erosion*. Report to the Chairman, Committee on Health, Education, Labor, and Pensions, U.S. Senate. Publication No. GAO-01-374. Washington, D.C.: General Accounting Office, May 2001.

\_\_\_\_\_. 2000. *Medicare+Choice: Plan Withdrawals Indicate Difficulty of Providing Choice While Achieving Savings*. GAO/HEHS-00-183. Washington, D.C.: General Accounting Office, September 7, 2000.

\_\_\_\_\_. 1998. *Retiree Health Insurance: Erosion in Retiree Health Benefits Offered by Large Employers*. GAO/T-HEHS-98-110. Washington, D.C.: General Accounting Office, March 10, 1998.

\_\_\_\_\_. 1997. *Retiree Health Insurance: Erosion in Employer-Based Health Benefits for Early Retirees*. GAO/T-HEHS-97-150. Washington, D.C.: General Accounting Office, July 1997.

\_\_\_\_\_. 1989. "Employee Benefits: Companies' Retiree Health Liabilities Large, Advance Funding Costly." GAO/HRD-89-51.

Gruber, Jonathan and Brigitte C. Madrian. 1995. "Health-Insurance Availability and the Retirement Decision." *The American Economic Review* 85 (4): 938-948.

Gustman, Alan L. and Thomas L. Steinmeier. 1993. "Employer Provided Health Insurance and Retirement Behavior." National Bureau of Economic Research Working Paper Series, Working Paper No. 4307. Cambridge, MA: National Bureau of Economic Research.

Jensen, Gail A., and Michael A. Morrissey. 1992. "Employer-Sponsored Postretirement Health Benefits: Not Your Mother's Medigap Plan." *The Gerontologist* vol. 32, no. 5: 693-703.

Karoly, Lynn A. and Jeannette A. Rogowski. 1994. "The Effect of Access to Post-Retirement Health Insurance on the Decision to Retire Early." *Industrial and Labor Relations Review* 48 (1): 103-123.

Kelly, P. 1985. "Welfare Benefit Plans in Corporate Acquisitions and Dispositions." *Real Property, Probate and Trust Journal* 20.

Kongstvedt, Peter R. 1996. *The Managed Health Care Handbook*, 3<sup>rd</sup> edition. Gaithersburg, Maryland: Aspen Publishers, Inc.

Leavitt, T. 1985. "Corporate Health and Life Insurance Benefits for Retirees." Working Paper No. 25, Brandeis University, Policy Center on Aging, Waltham, MA.

Levitt, Larry et al. 2000. *Employer Health Benefits: 2000 Annual Survey*. Menlo Park, CA: The Henry J. Kaiser Family Foundation; and Chicago, IL: Health Research and Educational Trust.

Loprest, Pamela. 1998. "Retiree Health Benefits: Availability From Employers and Participation by Employees." *The Gerontologist* 38 (6): 684-694.

McArdle, Frank, Steve Coppock, Dale Yamamoto, and Andrew Zebrak. 1999. *Retiree Health Coverage: Recent Trends and Employer Perspectives on Future Benefits*. Menlo Park, CA: The Henry J. Kaiser Family Foundation.

Mitchell, Olivia. 1994. Commentary in *Providing Health Care Benefits in Retirement*. Edited by Judith F. Mazo, Anna M. Rappaport, and Sylvester J. Schieber. Philadelphia, PA: University of Pennsylvania Press and Pension Research Council at The Wharton School of the University of Pennsylvania.

Monheit, Alan C. and Claudia L. Schur. 1989. "National Medical Expenditure Survey: Health Insurance Coverage of Retired Persons." Department of Health and Human Services Publication No. (PHS) 89-3444. Rockville, MD: National Center for Health Services Research and Health Care Technology Assessment.

Morrisey, Michael A., Gail A. Jensen, and Stephen E. Henderlite. 1990. "Employer-Sponsored Health Insurance for Retired Americans." *Health Affairs*: 57-73.

Salisbury, Dallas L. and Paul Fronstin. 1996. "American Business and the Restructuring of Healthcare." *Generations* 20: 53-56.

U.S. Census Bureau. 2000. "Projections of the Total Resident Population by 5-Year Age Groups and Sex With Special Age Categories: Middle Series." Selected years 2000 to 2030. Washington, D.C.: Census Bureau.

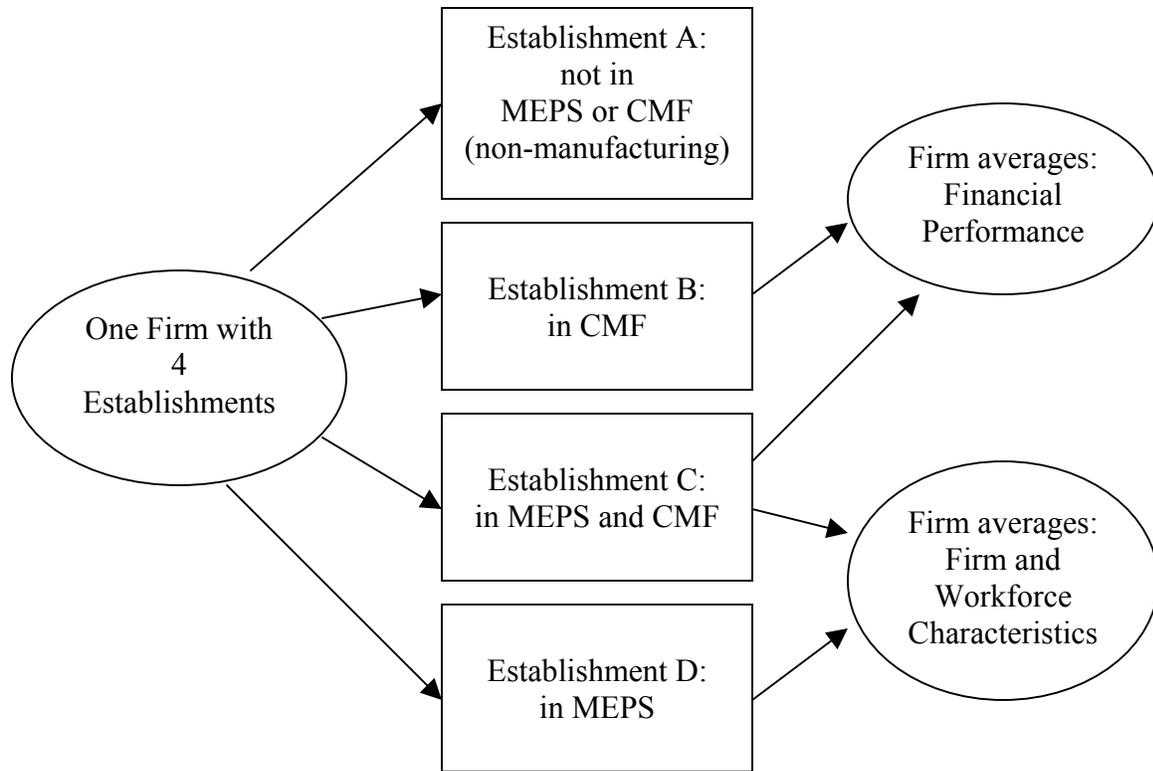
U.S. Department of Labor, Pension and Welfare Benefits Administration. 1995. *Retirement Benefits of American Workers: New Findings from the September 1994 Current Population Survey*. Washington, D.C.: Department of Labor, Sept. 1995), p. 25.

U.S. Department of Labor Statistics. 1986. *Employee Benefits in Medium and Large Firms 1985*. BLS Bulletin No. 2262. Washington, D.C.: Government Printing Office.

U.S. Senate Special Committee on Aging. 1986. "Retiree Health Benefits: The Fair Weather Promise?" Staff Report.

Warshawsky, Mark J. 1992. *The Uncertain Promise of Retiree Health Benefits: An Evaluation of Corporate Obligations*. Washington, D.C.: The AEI Press.

**Figure 1. Sampling from the MEPS – IC**



<b>Table 1. Sample Sizes</b>			
	<i>All Firms</i>	<i>Firms that offer health insurance</i>	<i>Firms that offer health insurance to retirees</i>
<b>MEPS – IC</b>			
Firms	25,385	15,347	2,102
Establishments	28,617	17,629	3,020
Employees	3,180,903	2,571,613	1,161,149
<b>Sample of manufacturers used in analysis</b>			
Firms	2,223	1,772	402
Establishments	2,643	2,005	561
Employees	686,149	548,229	318,375

<b>Table 2. Descriptive Statistics for Firms Offering Health Insurance</b>				
	<i>All MEPS – IC firms</i>		<i>Manufacturing firms</i>	
<i>Variable</i>	<i>Mean</i>	<i>Standard Deviation</i>	<i>Mean</i>	<i>Standard Deviation</i>
<b><u>Retiree Health Insurance</u></b>				
Provide insurance to retirees	.137	.344	.227	.419
<b><u>Financial Performance</u></b>				
Profit per employee	N/A	N/A	50.4	51.5
<b><u>Insurance Options</u></b>				
Medigap premium	N/A	N/A	1,299	282
# Medigap group insurers	N/A	N/A	47.2	14.7
# Medigap individual insurers	N/A	N/A	156	44.9
Medicare managed care premium	N/A	N/A	481	46.2
# Medicare managed care plans	N/A	N/A	944	648
<b><u>Firm Characteristics</u></b>				
Small firm	.552	.497	.371	.483
Medium firm	.294	.456	.416	.493
Large firm	.154	.361	.213	.409
Multi-unit status	.382	.486	.432	.496
Age	31.2	35.9	36.4	32.5
Northeast	.237	.422	.250	.429
Midwest	.232	.418	.281	.444
West	.226	.414	.161	.364
South	.201	.396	.274	.441
<b><u>Workforce Characteristics</u></b>				
% Female	.467	.313	.324	.239
% 50 years of age or older	.204	.277	.210	.176
% Earning less than \$6.50 per hour	.086	.207	.041	.131
% Earning \$6.50 to \$15 per hour	.579	.322	.650	.277
% Earning more than \$15 per hour	.331	.319	.306	.272
% Unionized: linear	.043	.172	.092	.237
% Unionized: quadratic	.031	.142	.065	.186
Observations are weighted using an establishment weight multiplied times establishment employment. These measures are found in MEPS.				

<b>Table 3. Descriptive Statistics for Firms Offering Health Insurance to Retirees</b>				
<i>Variable</i>	<i>All MEPS – IC firms</i>		<i>Manufacturing firms</i>	
	<i>Mean</i>	<i>Standard Deviation</i>	<i>Mean</i>	<i>Standard Deviation</i>
<b>Retiree Health Insurance</b>				
Percent employer cost sharing: single coverage	.486	.427	.517	.409
Percent employer cost sharing: family coverage	.479	.659	.477	.387
<b>Financial Performance</b>				
Profit per employee	N/A	N/A	73.4	72.4
<b>Other Insurance Options</b>				
Medigap premium	N/A	N/A	1,279	224
# Medigap group insurers	N/A	N/A	46.9	12.6
# Medigap individual insurers	N/A	N/A	159	41.6
Medicare managed care premium	N/A	N/A	480	38.1
# Medicare managed care plans	N/A	N/A	962	511
<b>Firm Characteristics</b>				
Small firm	.216	.412	.127	.333
Medium firm	.385	.487	.396	.490
Large firm	.399	.490	.478	.500
Multi-unit status	.690	.462	.724	.448
Age	57.5	42.9	54.3	37.9
Northeast	.248	.423	.232	.411
Midwest	.263	.430	.332	.453
West	.175	.370	.097	.287
South	.217	.400	.286	.437
<b>Workforce Characteristics</b>				
% Female	.469	.288	.323	.214
% 50 years of age or older	.243	.199	.252	.160
% Earning less than \$6.50 per hour	.066	.175	.023	.105
% Earning \$6.50 to \$15 per hour	.543	.306	.595	.286
% Earning more than \$15 per hour	.387	.315	.380	.288
% Unionized: linear	.114	.260	.189	.316
% Unionized: quadratic	.080	.214	.136	.256
Observations are weighted using an establishment weight multiplied times establishment employment. These measures are found in MEPS.				

<b>Table 4. Manufacturing Firms' Contributions to Retiree Health Insurance Premiums for Single Coverage</b>						
	<i>Employer Contributes 0%</i>		<i>Employer Contributes Between 0 and 100%</i>		<i>Employer Contributes 100%</i>	
	N=74		N=109		N=58	
<i>Variable</i>	<i>Mean</i>	<i>Standard Deviation</i>	<i>Mean</i>	<i>Standard Deviation</i>	<i>Mean</i>	<i>Standard Deviation</i>
<b>Retiree Health Insurance</b>						
% of single coverage premium contributed by employer	0	0	.562	2.09	1.00	0
% of family coverage premium contributed by employer	.025	1.03	.502	2.11	.845	2.11
<b>Financial Performance</b>						
Profit per employee	40.6	342	88.9	444	43.9	527
<b>Insurance Options</b>						
Medigap premium	1,246	1,971	1,264	1,364	1,423	2,396
# Medigap group insurers	51.9	87.3	49.0	70.6	48.1	175
# Medigap individual insurers	172	244	170	221	136	479
Medicare managed care premium	498	259	482	205	514	355
# Medicare managed care plans	1,303	4,762	1,106	2,605	1,289	6,935
<b>Firm Characteristics</b>						
Employment <sup>a</sup>	1,195	20,934	30,374	451,283	4,142	241,712
Age	60.8	272	74.3	257	44.5	235

**Table 4 continued. Manufacturing Firms' Contributions to Retiree Health Insurance Premiums for Single Coverage**

	<i>Employer Contributes 0%</i>		<i>Employer Contributes Between 0 and 100%</i>		<i>Employer Contributes 100%</i>	
	N=74		N=109		N=58	
<i>Variable</i>	<i>Mean</i>	<i>Standard Deviation</i>	<i>Mean</i>	<i>Standard Deviation</i>	<i>Mean</i>	<i>Standard Deviation</i>
<b>Workforce Characteristics</b>						
% Earning < \$6.50	.050	.864	.014	.452	.01	.494
% Earning \$6.50-\$15	.637	1.99	.548	2.13	.600	2.32
% Earning > \$15	.308	2.03	.438	2.17	.390	2.36
% Union: linear	.027	.796	.239	2.37	.098	2.52
% Union: quadratic	.015	.600	.166	1.91	.072	2.33
<sup>a</sup> Employment is reported as a continuous measure of firm size. The number of observations using dummy variables for different firm sizes is too small to provide reportable statistics.						

<b>Table 5. Probit Coefficients</b>			
Dependent Variable: Firm offers health insurance to retirees			
N=1,411			
<i>Variable</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>Marginal/Discrete Effects<sup>a</sup></i>
<b>Financial Performance</b>			
Profit per employee	-.0004	.001	.0004
<b>Insurance Options</b>			
# Medigap group insurers	.004	.005	-.001
# Medigap individual insurers	-.004	.002	-.0001
# Medicare managed care plans	.0001	.00009	3.21e-07
<b>Firm Characteristics</b>			
Small firm	-1.09***	.257	-.196 <sup>b</sup>
Medium firm	-.710**	.219	-.131 <sup>b</sup>
Multi-unit status	.100	.168	.058 <sup>b</sup>
Age	.008**	.002	.002
Northeast	.00006	.002	.0001
Midwest	.002	.002	.0003
West	-.003	.002	-.0005
<b>Workforce Characteristics</b>			
% Female	-.002	.003	-.0001
% 50 years of age or older	.005	.003	.001
% Earning between \$6.50 and \$15 per hour	.0008	.005	.0001
% Earning more than \$15.00 per hour	.002	.005	.001
% Unionized: linear	-.006	.012	-.00001
% Unionized: quadratic	.0001	.0001	4.63e-06
** Significant at the 0.01 level			
*** Significant at the 0.001 level			
<sup>a</sup> Computed at sample means unless otherwise noted.			
<sup>b</sup> dF/dx is for discrete change of dummy variable from 0 to 1.			

<b>Table 6. Tobit Coefficients</b>				
	<i>Single Coverage (N=182)</i>		<i>Family Coverage (N=169)</i>	
<i>Variable</i>	<i>Coefficient (Standard Error)</i>	<i>Marginal Effect<sup>a</sup></i>	<i>Coefficient (Standard Error)</i>	<i>Marginal Effect<sup>a</sup></i>
<b><u>Financial Performance</u></b>				
Profit per employee	.003* (.002)	.001	.001 (.001)	.0007
<b><u>Insurance Options</u></b>				
Medigap premium	.001 (.001)	.0004	.001* (.0003)	.0005
# Medigap group insurers	-.002 (.015)	-.0007	.0004 (.009)	.0003
# Medigap individual insurers	-.009 (.006)	-.003	-.006 (.004)	-.004
Medicare managed care premium	-.006 (.005)	-.002	-.001 (.003)	-.0009
# Medicare managed care plans	.001* (.0003)	.0002	.0001 (.0002)	.00007
<b><u>Firm Characteristics</u></b>				
Age	-.008 (.006)	-.003	-.004 (.004)	-.003
Small firm	.640 (1.10)	.242	.161 (.665)	.098
Medium firm	.055 (.636)	.021	.205 (.426)	.125
<b><u>Workforce Characteristics</u></b>				
% Earning between \$6.50 and \$15 per hour	.025 (.016)	.010	.012 (.009)	.007
% Earning more than \$15.00 per hour	.022 (.017)	.008	.016* (.009)	.010
% Union: linear	.007 (.015)	.003	.003 (.012)	.002
% Union: quadratic	5.72e-06 (.0002)	.22e-05	-1.8e-06 (.0002)	-.11e-05
<b>Selection Bias Factor</b>	<b>.160 (1.14)</b>	<b>.061</b>	<b>.163 (.717)</b>	<b>.010</b>
* Significant at the 0.10 level				
<sup>a</sup> Computed at sample means.				

